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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,098	03/20/2007	Mikhail Laksin	S9025.0219	1736
63725	7590	08/19/2010		
DICKSTEIN SHAPIRO			EXAMINER	
1633 Broadway			SHAH, MANISH S	
NEW YORK, NY 10019				
			ART UNIT	PAPER NUMBER
			2853	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/586,098

**Applicant(s)**

LAKSIN ET AL.

**Examiner**

Manish S. Shah

**Art Unit**

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ylitalo et al. (# US 2003/0083396) in view of Knox (# US 6398861).

Ylitalo et al. discloses:

- A hybrid energy curable solvent based printing ink comprising: (i) polymerizable material ([0085]); (ii) an energy curable monomer, oligomer, or mixture thereof ([0090]-[0093]); (iii) a vehicle comprising solvent ([0079]-[0081]) and (iv) pigment ([0066]).

- The energy curable monomer, oligomer, or mixture thereof, is an ethylenically unsaturated monomer, oligomer, or mixture thereof ([0091]-[0093]), wherein the energy curable monomer, oligomer, or mixture thereof, is in an amount of about 1% to 50% by weight of the printing ink ([0093]).

- The vehicle comprises water, ethanol, n-propanol, iso-propanol, n-butanol, sec-butanol, tert-butanol, iso-butanol, n-pentanol, or ethyl acetate ([0081]).

- The ink further comprising a photoinitiator, wherein the photoinitiator is in an amount between about 0.1% and about 20% (5 to 15%) by weight of the printing ink ([0094]-[0099]).

- The photoinitiator is selected from the group consisting of benzophenone ([0095]).
- A method of printing comprising: (i) printing a substrate with the printing ink (ii) drying the printed ink; and (iii) exposing the printed ink to an actinic radiation, wherein actinic radiation is IR light or electron beam ([0109]-[0113]).
- The steps (ii) and (iii) are performed sequentially or steps (ii) and (iii) are performed simultaneously ([0112]).

Ylitalo et al. differ from the claim of the present invention is that the ink comprising the solvent-soluble resin, which is selected from nitrocellulose, acrylate, methacrylate, polyester, polyamide, copolymer of styrene and maleic anhydride, polyurethane and epoxy. The solvent-soluble resin is in a range between about 0.1% to about 40% by weight of the printing ink.

Knox. teaches that to get printed image with good adhesion, ink composition comprises the solvent-soluble resin (binder) (column: 6, line: 45-65), wherein resin is selected from acrylate type resin, polyester and polyamide resin (column: 6, line: 45-67). They also teaches that the solvent-soluble resin is in a range between about 0.1% to about 40% by weight (3 to 45%) of the printing ink (column: 2, line: 25-30; column: 13, line: 25-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Knox by the aforementioned teaching of Tsuyoshi et al. in order to have a printed image with good adhesion.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ylitalo et al. (# US 2003/0083396) in view of Tsuyoshi et al. (# US 2004/0150702).

Ylitalo et al. discloses:

- A hybrid energy curable solvent based printing ink comprising: (i) polymerizable material ([0085]); (ii) an energy curable monomer, oligomer, or mixture thereof ([0090]-[0093]); (iii) a vehicle comprising solvent ([0079]-[0081]) and (iv) pigment ([0066]).
  - The energy curable monomer, oligomer, or mixture thereof, is an ethylenically unsaturated monomer, oligomer, or mixture thereof ([0091]-[0093]), wherein the energy curable monomer, oligomer, or mixture thereof, is in an amount of about 1% to 50% by weight of the printing ink ([0093]).
  - The vehicle comprises water, ethanol, n-propanol, iso-propanol, n-butanol, sec-butanol, tert-butanol, iso-butanol, n-pentanol, or ethyl acetate ([0081]).
  - The ink further comprising a photoinitiator, wherein the photoinitiator is in an amount between about 0.1% and about 20% (5 to 15%) by weight of the printing ink ([0094]-[0099]).
  - The photoinitiator is selected from the group consisting of benzophenone ([0095]).
  - A method of printing comprising: (i) printing a substrate with the printing ink (ii) drying the printed ink; and (iii) exposing the printed ink to an actinic radiation, wherein actinic radiation is IR light or electron beam ([0109]-[0113]).

- The steps (ii) and (iii) are performed sequentially or steps (ii) and (iii) are performed simultaneously ([0112]).

Ylitalo et al. differ from the claim of the present invention is that the ink comprising the solvent-soluble resin, which is selected from nitrocellulose, acrylate, methacrylate, polyester, polyamide, copolymer of styrene and maleic anhydride, polyurethane and epoxy. The solvent-soluble resin is in a range between about 0.1% to about 40% by weight of the printing ink.

Tsuyoshi et al. teaches that to get printed image with good adhesion, ink composition comprises the solvent-soluble resin (see Abstract; [0039]), wherein resin is selected from acrylate type resin, polyurethane resin and polyamide resin ([0039]; see Examples).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Ylitalo et al. by the aforementioned teaching of Tsuyoshi et al. in order to have a printed image with good adhesion.

It would have been obvious to one having ordinary skill in the art at the time of invention was made to incorporate the solvent-soluble resin is in a range between about 0.1% to about 40% by weight of the printing ink, since it has been held that it is not inventive to discovering and optimum value or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA1955).

***Response to Arguments***

3. Applicant's arguments filed 07/15/2010 have been fully considered but they are not persuasive. Applicant argued that the Ylitalo discloses in [0080] that radiation curable ink composition is solvent free, which is not persuasive. However, at end of the paragraph [0080] they clearly teaches that "a small amount may be desirably under circumstances, in that case the amount of solvent is preferably not more than 20 percent". Therefore, Ylitalo discloses radiation curable ink is **not** solvent free.
4. Applicant argued that the both the secondary reference Knox and Tsuyoshi as ink composition containing a solvent soluble resin that provides image with good adhesion, this characteristic is wrong, which is not persuasive.
5. Examiner used the Knox reference, because it clearly discloses in column: 6, line: 45-67 that the organic binder media include those organic materials habitually employed as binders in inks. The binder can be solvent soluble resin. Therefore it is well known in the art that solvent soluble resin used in the ink composition, it doesn't matter it is energy curable ink or regular ink. Therefore it would have been obvious to use the solvent soluble resin taught by Knox in Ylitalo, and by doing this it improves the application property (column: 6, line: 65-67).
6. Tsuyoshi clearly teaches that pigment ink composition comprises binder (which means that something used in binding) ([0038]-[0039]), therefore pigment based ink composition with binder material has good binding characteristics to the medium. Therefore, obviously Tsuyoshi's ink composition containing a solvent soluble resin that provides image with good adhesion characteristics.

7. Applicant in page 9 argued that the Knox reference does not even teach or suggest a printing ink, which is not persuasive, in Example 3 Knox clearly teaches that an aqueous printing ink was prepared and printed on paper. Therefore Knox teaches a printing ink.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Manish S. Shah/  
Primary Examiner  
Art Unit 2853

/MSS/